CONTAINER FOR DISPENSING LIQUIDS

CROSS REFERENCE TO RELATED APPLICATION

[0001] This application claims the benefit of a prior filed, co-pending application Serial No. 60/426,298, filed November 14, 2002, entitled CONTAINER FOR DISPENSING LIQUIDS.

BACKGROUND OF THE INVENTION

[0002] This invention relates to liquid containers and, more particularly, to a container whereby liquids can be released from the container in a controlled fashion after the bottle has been inverted.

[0003] A common problem exists when one is attempting to pour liquid from a bottle into a receptacle where the receptacle is difficult to reach or is relatively small or the bottle must be tipped or partially inverted in order to reach the receptacle. This problem is encountered when replacing a drinking water five-gallon bottle that must be inverted on the dispensing stand or when adding a fuel additive to a fuel tank of an automobile, or adding oil to an engine, to name a few examples. Often, when attempting to pour the liquid into the relatively small receptacle, the liquid is spilled on the surrounding surface such as the paint on the side of the automobile. The spilled liquid may damage the paint or present an environmental hazard.

[0004] A similar problem exists when one is attempting to pour oil into an automobile engine crankcase. Typically the oil fill receptacle is located deep within the engine bay. This means that the process required to pour the oil from the open, disposable bottle will usually result in spillage of oil over the engine and the operator's hands before the

target receptacle has been successfully hit by the spout of the opened oil bottle. Use of a funnel reduces the chance of spillage on the engine. However, pouring oil from a full bottle often nevertheless results in the oil spilling down the side of the funnel and consequently onto the engine or the operator's hands. Furthermore, most motorists will not have a funnel readily available.

[0005] Accordingly, it is an object of the present invention to provide a bottle whereby liquids may be released from the bottle in a controlled fashion by the operator after the bottle has been inverted.

[0006] Other objects and advantages of this invention will become apparent from the following description taken in connection with the accompanying drawings, wherein is set forth by way of illustration and example, a now preferred embodiment of this invention.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0007] Fig. 1 is a front view of a container of the present invention;

[0008] Fig. 2 is a side view of the container of Fig. 1;

[0009] Fig. 3 is a top view of the container of Fig. 1;

[0010] Fig. 4 is a bottom view of the container of Fig. 1;

[0011] Fig. 5 is a top view of an alternate embodiment of the container of Fig. 1;

[0012] Fig. 6 is a diagrammatic illustration of the container of Fig. 1 in an inverted orientation positioned above a receptacle;

[0013] Fig. 7 is a diagrammatic illustration of the container of Fig. 1 in an inverted orientation and positioned within a receptacle and dispensing liquid.

DETAILED DESCRIPTION OF THE INVENTION

[0014] Turning more particularly to the drawings, Figs. 1 and 2 illustrate a container 20 for holding a liquid 22, such as oil, water, or other chemical, for example. Bottle 20 comprises a bottom or base 24 having a flexible floor 26, a threaded cap or lid 28 covering the neck 30 of bottle 20. A tether 32 extends from a web 34 attached to the interior surface of floor 26 through liquid 22 to the interior surface of seal 36. Seal 36 is secured across the opening of bottle 20 to seal liquid 22 in bottle 20, with a liquid or thermal adhesive along the edge of the bottle opening, for example. Tether 32 may have a flared end 38 attached to seal 36 in order to provide a larger attachment surface area. A finger handle 40 is attached to the exterior surface of floor 26 opposite webbing 34 attached to the interior surface of floor 26. Tether 32 provides a link from the finger pull 40 to the seal 36.

[0015] Referring to Fig. 3, seal 36 is shown with cap 28 removed. Seal 36 is flush with the top of bottle 20 sealing in liquid 22. The flared end 38 of tether 32 is attached to the inside surface of seal 36 next to kerf cut 42. Kerf cut 42 may run part way around the perimeter of seal 36 as shown in Fig. 3 or completely around the perimeter of seal 36 (not shown). Alternatively, seal 36 may not have a kerf cut.

[0016] Referring to Fig. 4, finger handle 40 has a finger aperture 44. Finger handle 40 is shown in a folded position along hinge or fold line 46 and is attached to concave floor 26 along line 48. Finger handle 40 is typically stored in a flush position, and popped-up for use as discussed hereinbelow.

[0017] Referring to Fig. 6, bottle 20 is shown inverted with cap 28 removed. Seal 36 is intact preventing spillage of liquid 22 from bottle 20. Bottle 20 is positioned over a receptacle 54 such as an oil fill receptacle in an engine block 56 (shown in partial cut away).

[0018] Referring to Fig. 7, neck 30 of bottle 20 is inserted into receptacle 54. Finger handle 40 is popped-up into a generally perpendicular relationship to floor 26 and pulled. Floor 26 is flexed from a concave configuration to a flush or convex configuration. When finger handle 40 is pulled and floor 26 move from a concave to a flush or convex position, tether 32 pulls seal 36 which is torn along kerf cut 42 (see Fig. 3). Thus, liquid 22 is allowed to flow 58 from bottle 20 into crankcase 56 without spillage, for example.

[0019] In the preferred embodiment, bottle 20 is made of a flexible plastic. The floor 26 of bottle 20 has a memory so that during the life span of the bottle, floor 26 may be stored passively bowed inward or actively bowed outward. Finger handle 40 is typically stored in a flush position and popped up for use. Tether 32 on the inside of bottle 20 may be plastic or other material running from the center of the interior surface of floor 26 toward the mouth of bottle 20 and attaching to the interior surface of seal 36. Mouth and neck 30 of bottle 20 has a typical threaded cap with safety seal. Bottle 20 may be manufactured in one piece with the addition of a removable cap 28 using blow molding, injection molding or other techniques, for example.

[0020] Other applications include water bottles, such as stand alone water dispensers with a five-gallon, inverted water bottle used in an office environment. Using the container of the present invention, five-gallon water bottle may be inverted and placed on the water dispenser prior to opening, thus preventing spilling of the water. In another example, chemicals in plastic containers may be inverted prior to pouring into a holding tank such as a farm implement crop sprayer without exposing the operator to the liquid chemical.

[0021] Referring to Fig. 5, an alternate embodiment is shown in which the kerf cut 52 in seal 50- is arranged in a cross pattern. With the bottle 20 inverted and the neck 30

inserted into a receptacle, the sides of bottle 20 may be squeezed by the operator. The increased pressure against seal 50 is sufficient to rupture the kerf cut 52 and dispense the liquid into the receptacle. It is to be understood that other kerf cut patterns may be used with or without the tether.

[0022] It is to be understood that while certain now preferred forms of this invention have been illustrated and described, it is not limited thereto except insofar as such limitations are included in the following claims.